We claim:

1. An apparatus, comprising:

a manipulandum, the manipulandum being movable between a first position and a second position, the second position being associated with a threshold position;

a sensor configured to output a position signal associated with a position of the manipulandum; and

an actuator, the actuator being configured to apply haptic feedback to the manipulandum based on the position signal, the haptic feedback including a position-based component and a predetermined time-based component.

2. The apparatus of claim 1, wherein the manipulandum is a knob and the position-based component is a detent profile.

3. The apparatus of claim 1, wherein the predetermined time-based component includes a single time-based waveform.

4. The apparatus of claim 1, wherein the predetermined time-based component includes a series of time-based waveforms.

5. The apparatus of claim 1, wherein the predetermined time-based component is represented by at least one of: a saw tooth wave, a square wave, a pulse, a full sine wave, a half sine wave, and a triangle wave.

6. The apparatus of claim 1, the haptic feedback being a first haptic feedback, the apparatus further comprising:

a biasing element configured to bias the manipulandum in the first position, the actuator being configured to apply a second haptic feedback to the manipulandum when the threshold position is surpassed as the manipulandum moves from the second position to the first position.

7. The apparatus of claim 1, the haptic feedback being a first haptic feedback having a first predetermined time-based component, the apparatus further comprising:

a biasing element configured to bias the manipulandum in the first position, the actuator being configured to apply a second haptic feedback having a second predetermined time-based component to the manipulandum when the threshold position is surpassed as the manipulandum moves from the second position to the first position, the first predetermined time-based waveform and the second predetermined time-based waveform being different.

8. The apparatus of claim 1, the threshold position being a first threshold position, wherein:

the manipulandum is moveable from the second position to a third position, the third position being associated with a second threshold position; and

the actuator being configured to apply a second haptic feedback based on a position signal associated with the second threshold position, the second haptic feedback having the position-based component and a second predetermined time-based component.

9. The apparatus of claim 1, the threshold position being a first threshold position, wherein:

the manipulandum is moveable from the second position to a third position, and from a third position to a fourth position, the third position being associated with a second threshold position and the fourth position being associated with a third threshold position; and

the actuator being configured to apply a second haptic feedback based on a position signal associated with the second threshold position and a third haptic feedback based on a position signal associated with the third threshold position, the second haptic feedback having the position-based component and a predetermined time-based component associated with the third position, the third haptic feedback having the position-based component and a predetermined time-based component associated with the fourth position.

10. The apparatus of claim 1, wherein the manipulandum is a button disposed on a communication device.

11. The apparatus of claim 1, wherein the manipulandum is a button on a video game controller.

12. The apparatus of claim 1, wherein the manipulandum is a button on a computer mouse.

13. The apparatus of claim 1, the threshold position being a first threshold position, wherein:

the manipulandum is moveable from the second position to a third position, the third position being associated with a second threshold position; and

the actuator being configured to apply a second haptic feedback based on a position signal associated with the second threshold position, the second haptic feedback having the position-based component and a second predetermined time-based component, the second haptic feedback having a predetermined time-based waveform component that is different than the first haptic feedback predetermined time-based waveform component.

15. The apparatus of claim 1, further comprising:

a controller, the controller being configured to receive the position signal associated with a position of the manipulandum, the controller being configured to output a haptic feedback signal to the actuator, the haptic feedback signal including a position-based component and a predetermined time-based component.

16. A method, comprising:

receiving an indication of a manipulandum being moved from a first position to a second position;

outputting a position signal associated with the manipulandum being moved to the second position; and

producing haptic feedback associated with the position signal when the manipulandum is disposed at the second position, the producing haptic feedback including providing haptic feedback having a position-based component and a predetermined time-based component.

17. The method of claim 16, the haptic feedback being a first haptic feedback the method further comprising:

receiving an indication of the manipulandum being the manipulandum being moved from the second position to a third position;

outputting a position signal associated with the moving to the third position; and

outputting a second haptic feedback based on the position signal associated with the third position.

18. The method of claim 16, the haptic feedback being a first haptic feedback, the method further comprising:

receiving an indication of the manipulandum being moved from the second position to a third position;

outputting a position signal associated with the manipulandum being moved to the third position;

outputting a second haptic feedback based on the position signal associated with the third position;

receiving an indication of the manipulandum being moved from the third position to a fourth position;

outputting a third position signal associated with the manipulandum being moved to the fourth position; and

producing a haptic feedback associated with the position signal associated with the fourth position, the producing the third haptic feedback including producing haptic feedback having at least a position-based component and a predetermined time-based component.

19. The method of claim 16, the haptic feedback being a first haptic feedback, the method further comprising:

receiving an indication of the manipulandum being moved from the second position to a third position;

outputting a position signal associated with the manipulandum being moved to the third position;

outputting a second haptic feedback based on the position signal associated with the third position;

receiving an indication of the manipulandum being moved from the third position to a fourth position;

outputting a position signal associated with the manipulandum being moved to the fourth position;

producing a third haptic feedback associated with the position signal associated with the fourth position, the producing the third haptic feedback including producing haptic feedback having at least a position-based component and a predetermined time-based component; and

selecting a feature from a plurality of features based on at least one of the position signal associated with the manipulandum being moved to the second position, the position signal associated with the manipulandum being moved to the third position, and the position signal associated with the manipulandum being moved to the fourth position.

20. The method of claim 16, wherein the predetermined time-based component of the haptic feedback is associated with a predetermined time-based waveform, the producing the haptic feedback includes producing the haptic feedback using a controller configured to output the predetermined time-based waveform while outputting the position-based component of the haptic feedback.

21. The method of claim 16, further comprising:

outputting a biasing force configured to oppose the manipulandum being moved from the first position to the second position.

22 The method of claim 16, further comprising:

accessing the predetermined time-based component stored within a processor-readable medium in response to the position signal.

23. The method of claim 16, further comprising:

outputting a biasing force configured to oppose the manipulandum being moved from the first position to the second position using a virtual spring.

24. The method of claim 16, further comprising:

outputting a biasing force configured to oppose the manipulandum being moved from the first position to the second position using a physical spring.

25. The method of claim 16, further comprising:

outputting a biasing force configured to oppose the manipulandum being moved form the first position to the second position; and

producing a second haptic feedback win response to the manipulandum being moved from the second position to the first position.

26. The method of claim 16, further comprising:

receiving an indication of the velocity of the manipulandum being moved; and

modifying a characteristic of the haptic feedback in response to the velocity of the manipulandum.

27. An apparatus, comprising:

a manipulandum;

a biasing element configured to bias the manipulandum in a first position;

a sensor configured to output a position signal when the manipulandum is in a second position different from said first position; and

an actuator configured to output haptic feedback having a position-based component and a predetermined time-based component based on the position signal.

28. The apparatus of claim 27, further comprising:

a processor, the processor being configure to receive the position signal and output a haptic feedback signal having a position-based component and a predetermined time-based component to the actuator.

29. The apparatus of claim 27, the threshold position being a first threshold position, wherein:

the sensor is configured to output a position signal when the manipulandum is in a second threshold position, the actuator being configured to apply a second haptic feedback having a second position-based component and a second predetermined time-based component based on the position signal associated with the second threshold position.

30. The apparatus of claim 27, wherein the actuator includes a voice-coil-type actuator.

31. The apparatus of claim 27, wherein the biasing element is a spring.

32. The apparatus of claim 27, wherein the manipulandum includes a button on a communication device.

33. An apparatus, comprising:

a manipulandum movable through a plurality of positions, each level from the plurality of levels being associated with its own threshold level; and

an actuator configured to output haptic feedback when the manipulandum is moved to a first threshold level from the plurality of threshold levels, the haptic feedback having a position-based component and a predetermined time-based component.

34. The apparatus of claim 33, further comprising:

a spring configured to bias the manipulandum.

35. The apparatus of claim 33, wherein the predetermined time-based component includes a single time-based waveform.

36. The apparatus of claim 33, wherein the predetermined time-based component includes a plurality of time-based waveforms.

37. The apparatus of claim 33, further comprising a sensor configured to detect a position of the manipulandum, the sensor having a sensor resolution of about 1-8 bits.

38. A method, comprising:

receiving an indication of a manipulandum being rotated from a first position to a second position;

sensing when the manipulandum is located at the second position; and

outputting haptic feedback in response to the manipulandum being disposed in the second position, the haptic feedback being associated with a position-based component and a predetermined time-based component.

39. The method of claim 38, wherein the outputting includes outputting a plurality of predetermined time-based waveforms.

40. The method of claim 38, wherein the outputting includes outputting a single predetermined time-based waveform.

41. The method of claim 38, wherein the outputting haptic feedback includes producing a predetermined time-based waveform component having a period of about 1 ms to about 300 ms.

42. The method of claim 38, further comprising:

receiving an indication that the manipulandum has been rotated between a second position and a third position.

43. The method of claim 38, the haptic feedback being a first haptic feedback, the method further comprising:

outputting a second haptic feedback when the manipulandum reaches the third position, the second haptic feedback being associated with a second position-based component and a second predetermined time-based component.

44. The method of claim 38, further comprising:

selecting a predetermined time-based waveform; and

inputting a signal associated with the selected predetermined time-based waveform into a controller, the controller being configured to receive the signal associated with the predetermined time-based waveform, the controller configured to control the actuator based on the signal associated with the selected predetermined time-based waveform when the manipulandum is disposed at the second position.

45. The method of claim 38, further comprising:

outputting a hysteresis effect when the manipulandum is disposed at a position between the first position and the second position.

46. The method of claim 38, wherein outputting haptic feedback includes outputting haptic feedback having a position-based component, the position-based component being a detent profile.